

What is claimed is:

1. An optical disc, comprising:
a substrate, said substrate having a
patterned surface and an additional surface, said
patterned surface contributing to an information layer
of said disc,

wherein said information layer includes an
operational structure that is trackable by an optical
disc drive when said substrate patterned surface is
presented laser-proximal to said substrate additional
surface.

2. The optical disc of claim 1, wherein
said operational structure is trackably disposed as a
forward image in positive relief.

3. The optical disc of claim 1, wherein
said operational structure is trackably disposed in the
plane of said information layer that is most distal to
said substrate additional surface.

4. The optical disc of claim 1, wherein
said operational structure is trackably disposed as a
forward image in negative relief.

5. The optical disc of claim 1, wherein
said operational structure is trackably disposed in the
plane of said information layer that is most proximal
to said substrate additional surface.

6. The optical disc of any one of
claims 1-5, wherein said operational structure includes
a wobble groove.

7. The optical disc of claim 1, further comprising at least one nonoperational structure readable concurrently with said operational structure.

8. The optical disc of any one of claims 2-5, further comprising at least one nonoperational structure readable concurrently with said operational structure.

9. The optical disc of any one of claim 6, further comprising at least one nonoperational structure readable concurrently with said operational structure.

10. The optical disc of claim 7, wherein said nonoperational structure is disposed confocally with said operational structure.

11. The optical disc of claim 8, wherein said nonoperational structure is disposed confocally with said operational structure.

12. The optical disc of claim 9, wherein said nonoperational structure is disposed confocally with said operational structure.

13. The optical disc of claim 7, wherein said nonoperational structure is an analyte-specific signal element.

14. The optical disc of claim 8, wherein said nonoperational structure is an analyte-specific signal element.

15. The optical disc of claim 9, wherein said nonoperational structure is an analyte-specific signal element.

16. The optical disc of claim 10, wherein said nonoperational structure is an analyte-specific signal element.

17. The optical disc of claim 11, wherein said nonoperational structure is an analyte-specific signal element.

18. The optical disc of claim 12, wherein said nonoperational structure is an analyte-specific signal element.

19. The optical disc of claim 10, wherein said information layer further includes a reflective layer, and wherein said nonoperational structure is disposed laser-proximal to said reflective layer when said substrate patterned surface is presented laser-proximal to said substrate additional surface.

20. The optical disc of claim 10, wherein said information layer further includes a reflective layer, and wherein said nonoperational structure is readably disposed on a disc surface more distant from said substrate additional surface than is said reflective layer.

21. The optical disc of either claim 19 or claim 20, wherein said nonoperational structure is disposed upon a surface of said reflective layer.

22. A trackable optical disc having a readable nonoperational structure, comprising:
an information layer, said information layer having a structure trackable by an optical disc reader;
and
at least one nonoperational structure,
wherein said nonoperational structure and said trackable structure are concurrently readable by a single optical pickup.

23. The optical disc of claim 22, wherein said nonoperational structure is disposed confocally with said trackable structure.

24. The optical disc of either claim 22 or claim 23, wherein said trackable structure includes a wobble groove.

25. The optical disc of claim 24, wherein said nonoperational structure is an analyte-specific signal element.

26. The optical disc of claim 22, wherein said information layer includes a reflective layer, and wherein said nonoperational structure is disposed laser-proximal to said reflective layer when said disc is presented for concurrent reading of said nonoperational and operational structures.

27. The optical disc of claim 22, said disc further comprising:

a substrate, said substrate having a patterned surface and an additional surface; and
a reflective layer, wherein said nonoperational structure is disposed laser-proximal to

said reflective layer when said substrate patterned surface is presented laser-proximal to said substrate additional surface.

28. The optical disc of claim 26 or claim 27, wherein said nonoperational structure is disposed upon a surface of said reflective layer.

29. The optical disc of either claim 7 or claim 22, wherein said nonoperational structure produces at least one discriminable signal during trackable reading of said disc.

30. The optical disc of claim 29, wherein said discriminable signal is an amplitude variation in the HF signal.

31. The optical disc of claim 29, wherein said discriminable signal is an amplitude variation in the TE signal.

32. The optical disc of claim 29, wherein said discriminable signal is an amplitude variation in the FE signal.

33. The optical disc of claim 7 or claim 22, wherein the duration of at least one signal produced by said nonoperational structure during trackable reading of said disc provides a substantially quantitative measure of the size of said nonoperational structure in the direction of disc tracking.

34. The optical disc of claim 10 or claim 23, wherein said nonoperational structure is disposed readably upon the laser-proximal side of a

light transmissible coating applied to the laser-proximal surface of said information layer, when said substrate patterned surface is presented laser-proximal to said substrate additional surface.

35. The optical disc of claim 22, wherein said trackable structure is a holographically-projected image.

36. The optical disc of claim 35, wherein said holographic image is projected in a plane confocal with said nonoperational structure.

37. The trackable optical disc of claim 35 or claim 36, wherein said projected tracking structure is an image of a wobble groove.

38. An optical disc assembly having readable nonoperational structures, comprising:

an optical disc according to claim 1 or claim 22; and

a cover, wherein said cover further focuses an incident laser on said disc's information layer.

39. The optical disc assembly of claim 38, wherein said cover is nonintegral to said disc and attachable thereto.

40. The optical disc assembly of claim 39, wherein said cover is reversibly attachable to said disc.

41. The optical disc assembly of claim 39, wherein said cover is moveably attached to said disc.

42. The optical disc assembly of claim 41, wherein said cover is hingeably attached to said disc.

43. The optical disc assembly of claim 38, wherein said cover consists essentially of a material selected from the group consisting of plastic and glass.

44. The optical disc assembly of claim 43, wherein said cover consists essentially of plastic.

45. The optical disc assembly of claim 44, wherein said cover consists essentially of polystyrene.

46. The optical disc assembly of claim 44, wherein said cover consists essentially of polycarbonate.

47. The optical disc assembly of claim 38, wherein said assembly has a diameter in the radial plane between 110 - 130 mm and a depth in the direction of the optical axis between 1.1 - 1.3 mm.

48. The optical disc assembly of claim 38, wherein said nonoperational structure is disposed upon the disc-proximal side of said cover.

49. An optical disc having a readable nonoperational structure, comprising:

a reflective layer;

an additional reflective layer;

and

a nonoperational structure,

wherein said reflective layer or said additional reflective layer has a structure trackable by an

optical disc reader, and wherein said nonoperational structure is disposed readably with said trackable structure.

50. The trackable optical disc of claim 49, wherein said nonoperational structure and said trackable structure are readable by a single optical pickup.

51. The trackable optical disc of claim 49, wherein said additional reflective surface is semireflective.

52. The trackable optical disc of claim 51, wherein said nonoperational structure is disposed confocally with a surface of either said reflective layer or of said semireflective layer.

53. The trackable optical disc of claim 52, wherein said nonoperational structure is disposed confocally with a surface of said semireflective layer.

54. The trackable optical disc of claim 53, wherein said nonoperational structure is disposed on the laser-distal side of said semireflective surface.

55. The trackable optical disc of claim 52, wherein said nonoperational structure is disposed confocally with a surface of said reflective layer.

56. The trackable optical disc of claim 55, wherein said nonoperational structure is disposed on the laser-proximal side of said reflective surface.

57. The trackable optical disc of claim 52, wherein said nonoperational structure is disposed between said reflective layer and said semireflective layer.

58. The trackable optical disc of claim 49, wherein said trackable structure includes a wobble groove.

59. The trackable optical disc of claim 58, wherein said nonoperational structure is disposed confocally with said wobble groove.

60. The trackable optical disc of claim 58, wherein said reflective layer and semireflective layer are reversibly separable.

61. An optical disc system for detection of nonoperational structures, comprising:

a trackable optical disc according to claim 7 or claim 22; and
an optical disc reader.

62. An optical disc system for detection of nonoperational structures, comprising:

an optical disc assembly according to claim 38; and
an optical disc reader.

63. A method for making a forward image, positive relief, inverted optical disc substrate having a trackable operational structure, the method comprising:

forming a stamper with a trackable operational structure identical in image orientation and relief to a standard master; and

forming said optical disc substrate directly from said stamper.

64. A method for making a forward image, negative relief, inverted optical disc substrate with a trackable operational structure, the method comprising:

forming a reverse master;

forming a stamper having image orientation and relief opposite to said reverse master; and

forming said optical disc substrate directly from said stamper.

65. The method of claim 63 or claim 64, wherein said forming of said optical disc is performed in a DVD mold.

66. A method for making a trackable optical disc having concurrently readable nonoperational structures, the method comprising:

applying a reflective layer to the patterned surface of an inverted disc substrate as prepared by the method of claim 63 or 64; and

disposing a nonoperational structure confocally with, and laser proximal to, said reflective layer.

67. A method for making a trackable optical disc having concurrently readable nonoperational structures, the method comprising:

applying a reflective layer to the patterned surface of a disc substrate according to claim 1 or claim 4; and

disposing a nonoperational structure confocally with, and laser proximal to, said trackable operational structure.

68. The method of claim 66, wherein said trackable operational structure includes a wobble groove.

69. The method of claim 67, wherein said trackable operational structure includes a wobble groove.

70. A method of making a trackable optical disc assembly having readable nonoperational structures, the method comprising:

disposing a nonoperational structure on the disc-proximal side of a light transmissive cover; and
attaching said cover to an inverted optical disc according to claim 1 or claim 4.

71. A method of using an optical disc reader to read a nonoperational structure of a disc, the method comprising trackably reading the optical disc of any one of claim 7 or claim 22 in said reader.

72. The method of claim 71, wherein said reading further includes detecting high frequency events in said reader's HF signal.

73. The method of claim 72, wherein said event duration reports dimensional information about said nonoperational structure.

74. The method of claim 72, wherein said disc includes a wobble groove.

75. A method of segregating tracking signals from signals generated by readable nonoperational structures disposed upon an optical disc, comprising:

disposing said nonoperational structure confocally with a trackable structure that produces minimal variation in the HF signal during trackable reading of said optical disc.

76. The method of claim 75, wherein said trackable structure includes a wobble groove.

77. The method of claim 76, wherein said nonoperational structure is disposed laser-proximal to said wobble groove.

78. An optical disc comprising:
a substrate, said substrate having a patterned surface and an additional surface; and
an information layer,
wherein said information layer comprises an operational structure that is disposed in forward image positive relief when said substrate patterned surface is presented laser-proximal to said substrate additional surface.

79. An optical disc comprising:
a substrate, said substrate having a patterned surface and an additional surface; and
an information layer,
wherein said information layer comprises an operational structure that is disposed in forward image negative relief when said substrate patterned surface is presented laser-proximal to said substrate additional surface.

80. The optical disc of either claim 78 or claim 79, wherein said operational structure includes a wobble groove.

81. The disc of claim 78 or claim 79, further comprising a nonoperational structure disposed confocally with said operational structure.

82. The disc of claim 80, further comprising a nonoperational structure disposed confocally with said wobble groove.

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